



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/386,605	08/31/1999	CHRISTOPHER G. TAYLOR	38-21-(15757	1594

27161 7590 03/27/2007

MONSANTO COMPANY  
800 N. LINDBERGH BLVD.  
ATTENTION: GAIL P. WUELLNER, IP PARALEGAL, (E2NA)  
ST. LOUIS, MO 63167

EXAMINER
----------

HELMER, GEORGIA L

ART UNIT	PAPER NUMBER
----------	--------------

1638

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/386,605	<b>Applicant(s)</b> TAYLOR ET AL.	
	<b>Examiner</b> Georgia Helmer	<b>Art Unit</b> 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 8-26 is/are pending in the application.
- 4a) Of the above claim(s) 12-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 8-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Request for Continued Examination***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 November 2006 has been entered.

***Status of the Claims.***

2. Claims 1 and 8-26 are pending, claims 12-26 are withdrawn as being drawn to a nonelected invention, and claims 1 and 8-11 are examined in the instant action.
3. All rejections not addressed below have been withdrawn.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

***Claim Objections***

5. Claim 1 is objected to because of the following informalities: claim 1 has two periods as punctuation. A proper claim has only one period. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1, recites the limitation "wild-type shoots, stems and leaves" in lines 12 and 13. There is insufficient antecedent basis for this limitation in the claim.

Correction/clarification is required.

***Claim Rejections - 35 USC § 103***

7. Claims 1 and 8-11 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Trulson et. al. (EP 0262972 A2 published April 6, 1988), in view of Simpson et. al. (1986) Plant Mol. Biol. vol 6, pages 403-415 and Savka et. al. (1990) Phytopathology vol 80, pages 503-508, for reasons set forth in previous Office Actions as well as those set forth below.

Applicant's claims are drawn to a method of producing a stable chimeric dicot plant having transgenic root tissue. Applicant's invention is in the field of crop plant transformation.

Applicant traverses primarily that "Trulson et. al. teach the transformation of cucumber tissue with *Agrobacterium rhizogenes*. However, they do not describe chimeric plants comprising transformed roots and wild-type shoots, stems and leaves as explicitly recited in claim 1." "The methods of Trulson et. al. teach do not lead to chimeric plants. Instead, regenerated and fully transformed plants are produced comparable to those described in the review of related art in the present specification, for instance at page 3, lines 6-7. That is, Trulson et. al. teach methods (eg. p. 6, lines 1-

15) that take at least several weeks just to obtain embryoids, which are then dissected and subjected to additional culture to later develop into plants, and these plants are fully transgenic, rather than chimeric." See (Response, p. 6, 1<sup>st</sup> ¶) Applicant continues."the present claims are directed towards methods for producing stably transformed chimeric plants having transgenic root tissue, in the realization that production of transgenic plant tissue for the purposes of screening for the function or presence of a gene of interest does not require the time and effort associated with the regeneration of fully transgenic plants. Instead, as noted in the specification at page 2, lines 30 to page 3, line 17, a rapid method for screening is developed which bypasses the need for complete plant regeneration procedures. Such a method is not taught by Trulson et. al., and neither Savka et. al., nor Simpson et. al. cures this deficiency."

Applicant's traversal is unpersuasive. The methods of Trulson et. al. do lead to the production of chimeric plants. Trulson et. al., p. 6 lines 4-15, teach "in a first series of tests (Series A), roots produced on the inoculated surfaces were excised and placed on CTM-2 medium... [non-selective] medium followed by culture 2-3 weeks under continuous light. In a second series of tests (Series B), roots produced on the inoculated surfaces were excised and placed on CTM-2 medium supplemented with kanamycin to select transformed plants." In both series of tests, embryoids...developed and were transferred onto medium on which shoot (plantlets) were produced. The plantlets of Series A above, which were produced without selection on kanamycin, contained some transgenic tissue and some wild-type tissue. Since *Agrobacterium rhizogenes* transformation produces transgenic root tissue, some of the roots produced are

Art Unit: 1638

transgenic and some are not. Accordingly, Series A plantlets, not raised under selection, will be a population of plantlets having some transgenic roots and some wild-type shoots, stem and leaves. Also present in the Series A plantlets are those having transgenic roots, and a mixture of transgenic and wild-type shoots, stem and leaves. These plants are chimeric cucumber plants having some transgenic roots and some wild-type shoots, stem and leaves, as set forth in claim 1.

Applicant traverses primarily that the chimeric plants of the instant invention function for purposes of screening for the function or presence of a gene of interest plants, and do not required the time and effort associated with regeneration of fully transgenic plants. (Response, p. 6, 2<sup>nd</sup> ¶)

Applicant's traversal is unpersuasive. The claims are not drawn to any particular timeframe or amount of effort. See *In re Lindner*, 173 USPQ 356 (CCPA 1972) and *In re Grasselli*, 218 USPQ 769 (Fed. Cir. 1983) which teach that the evidence of nonobviousness should be commensurate with the scope of the claims.

Applicant traverses primarily that Savka et. al and Simpson et. al. describe production of hairy root tissue by *Agrobacterium rhizogenes* on soybean, but do not describe regeneration of chimeric plants.

Applicant's traversal is unpersuasive. The instant rejection is under §103, which is an obviousness rejection, not a § 102 anticipation rejection. Trulson et. al. teach the transformation of cucumber (a dicotyledonous plant) using *Agrobacterium rhizogenes*

Art Unit: 1638

as the transforming agent. Trulson et. al. teach cucumber plants and tissue. The instant claims are however drawn to soybean. The plant system taught by Savka et. al and Simpson et. al. is soybean. Simpson et. al. (1986) Plant Mol. Biol. vol 6, pages 403-415, teach the Agrobacterium Rhizogenes transformation of soybean to produce transformed roots from soybean stem sections or hypocotyls (p. 409, Table 2). See Office Action of 20 October 2005, p. 8. Savka et. al. (1990) Phytopathology vol 80, pages 503-508, teach that Agrobacterium Rhizogenes K599 is "by far the most effective in inducing hairy roots in soybean" (p. 506 ¶ bridging to p. 507). See Office Action of 20 October 2005, p. 8.

Thus the claimed invention would have been prima facie obvious as a whole to one of ordinary skill in the art at the time it was made, especially in the absence of evidence to the contrary. Accordingly, the claimed invention is prima facie obvious in view of the prior art

### **Remarks**

8. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Georgia Helmer whose telephone number is 571-272-0796. The examiner can normally be reached on 10-6 Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1638

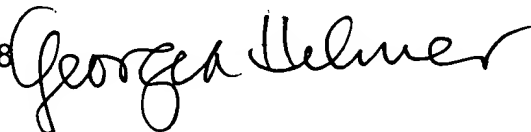
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Georgia Helmer PhD

Patent Examiner

Transgenic plants – art unit 1638

18 March 2007

A handwritten signature in black ink, reading "Georgia Helmer". The signature is written in a cursive, flowing style with a large initial "G".